DISCUSSION PAPER

A Recycling Strategy for Ontario

RECYCLING ADVISORY COMMITTEE

January, 1989

Prepared for
The Recycling Strategy Task Group
of the Recycling Advisory Committee

Prepared by
Resource Integration Systems Ltd.

Produced with the financial assistance of
Ontario Multi-Material Recycling Inc.

Recycling
Advisory Committee

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Dear Report Recipient:

This discussion paper is intended to provide an opportunity for the participation of interested parties in the development of a comprehensive and effective municipal solid waste recycling strategy for the Province of Ontario.

The Ontario Minister of the Environment, the Honourable Jim Bradley, received this report from the Recycling Advisory Committee (RAC) on January 11, 1989 for his consideration as a starting point in building a consensus beyond the current membership of RAC. In his February 8th response to RAC, the Minister stated:

> "I am most anxious to see the scope of recycling activities in Ontario expand in the near future well beyond the Blue Box system. The comments RAC will receive in response to its discussion paper will assist me greatly in determining the best approach to take to reduce significantly the waste management problems that confront us all. I hope the major players in this issue will seize the opportunity of taking a leadership role and will join together voluntarily to produce an effective plan. I look forward to a response from RAC on the outcome of this process by May."

RAC submits this report to you for your consideration and comment. We hope you will find it contains many of the essential elements of a progressive plan which will permit Ontario to maintain its leadership role in recycling across North America.

Yours truly,

J. Wendy Cook
Chairperson

DISCUSSION PAPER
A RECYCLING STRATEGY FOR ONTARIO

1.0 INTRODUCTION

The Recycling Advisory Committee (RAC) was established by an Order-in-Council (1985) to advise the Minister of the Environment on establishing multi-material source separation programs and on Ontario Regulations 622/85, 623/85 and 633/85, regarding carbonated soft drink containers.

The efforts of RAC, combined with those of Ontario Multi-Material Recycling Inc. (OMMRI), the Ministry of the Environment (MOE), municipalities and recyclers in Ontario have resulted in the development of a comprehensive network of recycling programs across the province. It is now projected that over 1,800,000 Ontario households, representing over 60% of the population of the province, will have convenient access to recycling collection services for old newspapers, glass bottles and jars, metal food and beverage cans, and PET soft drink bottles, by the end of 1989.

In a letter to RAC dated July 20, 1988, the Minister of the Environment made an additional request of RAC:

> Given the major accomplishments of RAC, and the need to move beyond Blue Box Class 1 systems in the province, I plan to expand the mandate and membership of RAC.
>
> My Ministry is now developing a long-term waste management plan which includes recycling. I also understand that the private sector and the RCO are putting together some suggestions for recycling activities in the future. As I would like to see a consensus build as these positions develop, I would appreciate your early involvement in the

integration and evaluation of these positions over the next few months.

I would also appreciate your contribution to RAC's new mandate and expanded membership post January 1989.

In response to this challenge, RAC, with the support of OMMRI, established the Recycling Strategy Task Group, and retained the services of Resource Integration Systems, Ltd. (RIS) in order to prepare a Draft Position Paper for submission to RAC. The members of the Task Group included:

Wendy Cook	Chairperson, RAC
Joe Maclean	RAC Staff
Harold Corrigan	Chairman, OMMRI
Bob Flemington	President, OMMRI
John Hanson	Executive Director, Recycling Council of Ontario (RCO)
Colin Isaacs	Executive Director, Pollution Probe
Hardy Wong	Director, Waste Management Branch, MOE
Gary Gallon	Senior Policy Advisor, Office of the Minister of the Environment
Derek Stephenson	President, RIS

The Recycling Strategy Task Group prepared a draft report and submitted it to RAC on January 10, 1989. See the Appendix for a list of the members of RAC. The report was subsequently revised by RAC and forwarded to the Ontario Minister of the Environment as a starting point for building a consensus beyond the current membership of RAC. It is specifically intended as a framework for broad discussion and participation in the development of a more comprehensive and effective municipal recycling strategy for the province.

The report represents a brief synopsis of the analysis and debate conducted by the members of the Recycling Strategy Task Group and RAC on some of the key waste management issues confronting the Province of Ontario.

It does not necessarily represent the respective policy positions of the organizations of which the individuals of RAC and its Recycling Strategy Task Group are members.

2.0 SCOPE OF THIS REPORT

The Ministry of the Environment is developing a broad Ontario Waste Abatement Strategy which is expected to address all elements of waste, including residential, commercial, industrial, institutional, construction, demolition, medical, and others. The report, expected to be released in 1989, encompasses six broad components:

- Legislative
- Financial
- Technical
- Research
- Waste Management Facilities
- Enforcement and Monitoring

This current report addresses only one segment of the total waste management needs of the province — *the increased recovery and recycling of those materials which are now generated as municipal solid wastes. For the purposes of this report, municipal solid wastes are considered to include those solid wastes generated from residential, commercial, and industrial sources which are now commonly collected by municipal forces or their contractors, for disposal in landfill sites.*

The focus of this report, therefore, encompasses only a portion of solid wastes now disposed in Ontario. This is not meant to suggest in any way that waste reduction and recycling strategies are not required for other waste streams. These other waste streams contain large, untapped volumes of recyclable materials, a large portion of which are known to be recoverable and recyclable.

The primary emphasis of RAC and therefore of the information and specific recommendations which follow, however, was on increasing the recovery and recycling of that portion of the municipal solid waste which is generated primarily from homes, and in the institutional and commercial establishments for which a local government generally has

the responsibility to provide waste collection and disposal services. Therefore, while the scope of the report seeks to encompass all municipal solid wastes, the implications for those large commercial and industrial generators of solid wastes (which are thought to contribute 50% or more of the total solid wastes generated in Ontario) require even more detailed analysis.

The rationale for this more narrow focus on a part of the waste stream can be summarized as follows:

(a) Incomplete Information on Total Waste Composition

The precise quantities and composition of **all** solid waste generated in Ontario is unknown.

While the available information on **municipal** solid wastes in Ontario is dated, it is widely assumed that generation rates and composition of this material is **relatively** constant across the province and indeed, across North America. In addition to having more complete knowledge of these wastes, more is also known about the immediate, technically proven options for reducing and recycling these wastes.

(b) Infrastructure for Expansion Already In Place

The evolution of a province-wide, (significantly) standardized, municipally-based, "Class-1 Recycling program" infrastructure represents an enormously powerful educational and operational base for further expansion. Policy decisions can be made, and implemented, that are generally equitable and which have wide applicability throughout the province.

The Ministry of the Environment can define the waste reduction and recycling goals for the province, and already has most of the tools in hand required to achieve these goals. Local governments

already exercise authority over those wastes they now manage. An effective model — OMMRI — already exists, which has demonstrated the effectiveness of private-sector participation in implementing recycling programs within this sector.

Several additional considerations favour immediate efforts to increase the recycling of municipal waste at this time:

(a) Focus of Growing Public Concern

A review of media reports and solid waste legislation being drafted across North America clearly illustrates growing public awareness and attention to the disposal of municipal solid wastes. As a direct response to this growing concern, we are seeing unprecedented political response to the issue. In the 1987-88 legislative session alone, over 2000 solid waste bills were introduced into U.S. state legislatures (by October). In addition, 300 measures were directed at packaging and containers.

As existing waste disposal facilities reach capacity, local community opposition to the siting of new facilities is universal. Equally universal is the pressure to move up through the widely accepted "waste management hierarchy" from reliance on landfill alone, and to a lesser degree, incineration, to more effective action to recycle, reuse, and reduce the generation of wastes at their source.

(b) Individual Companies Can Already Take Direct Action

Private companies which generate large volumes of wastes as a result of their business operations have long managed and paid for disposal of these wastes directly. Although prevailing North American waste management policies have traditionally undervalued the waste disposal services provided by the host community, these generators have generally paid for their waste

disposal in proportion to the volumes that they produce. Actions taken to increase waste reduction efforts among these generators will be governed largely by the demand and price paid for secondary materials, the costs of alternative waste management options, and regulatory pressure from government.

(c) Growing Industry Concern Over Government Intervention

The responsibility for disposing of the products and packaging produced by individuals has, to date, rested almost exclusively with local governments. As waste disposal pressures mount, and costs rise dramatically, governments are turning their attention increasingly towards the "producers" of products that become a part of municipal solid waste in order to:

- influence production decisions to minimize waste produced up-stream, and to facilitate materials recovery and recycling down-stream;
- shift some of the responsibility and costs for managing the wastes produced; and
- create markets to utilize materials which are recovered.

The traditional tools for achieving these objectives have been the introduction of tax and regulatory measures which may add costs to industry, consumers, or both; limit freedom of choice in production and purchasing decisions; and otherwise disrupt competitive forces within the marketplace. As a result, there appears to be growing industry willingness to participate in the development and implementation of effective waste management alternatives in order to prevent increased government regulation in this area.

(d) Affects the Largest Number of People Directly

Municipal source separation recycling programs provide an opportunity for quickly and directly involving the largest number of individuals in the province in developing effective solutions to waste management problems. They require that people take a direct and personal responsibility for at least a portion of the wastes they produce, and therefore, offer significant opportunities for educating people about the need for effective long-term solutions to the waste management problem.

Designing and implementing a truly effective waste reduction and recycling strategy in Ontario is an enormously complex undertaking. It will require major shifts in people's established behavior patterns, breakthroughs in technology, investment in new production facilities, and the reorientation of our basic waste management philosophies and systems. Such a transition must be carefully planned to maximize the chances for success, and to minimize the potential risks and dislocations inherent in such change. Beginning immediately with the target wastes identified in this report will provide an effective launch to a very complex process.

The rate of implementation of the Blue Box system in Ontario has exceeded all expectations. While the waste reduction impacts of this option are limited (i.e., of the order of 10% of MSW) it provides an enormously important base upon which to build a more comprehensive waste reduction and recycling system.

2.1 Target Wastes

The Ministry of the Environment estimates that 10 million tonnes of municipal solid waste (Residential & Commercial/Industrial) are

disposed of in this province every year, or slightly over 1 tonne per person per year.

Tables 1 to 4 and Figures 1 and 2 found in the Appendix to this report provides some examples of available information on the nature of MSW. A review of this material will demonstrate that there is a lack of detailed data available, and that significant discrepancies may exist among these sources.

Figure 1 provides a general estimate of the composition of Ontario's MSW by specific waste material type. The **exact** percentage that each of these materials contribute to the Ontario municipal solid waste stream is not known. This composition is also known to vary over time, and with the socio-economic conditions of the community generating these wastes. Figure 2 simply applies these composition numbers to the MOE estimate of 10,000,000 tonnes of MSW disposed in Ontario in 1988. These estimates must be considered highly speculative at this time.

This information is intended to provide "order-of-magnitude estimates" of the volumes of each of these target materials for preliminary planning purposes. The Ministry of the Environment is expected to launch a study in 1989 to update some of these estimates for Ontario.

The target wastes can also be categorized into 4 major groupings:

- Durable Goods — i.e., appliances, furniture, tires;
- Non-Durable Goods — i.e., newspapers, tissue, office and other papers, clothing and footwear;
- Containers and Packaging — i.e., glass, steel, aluminum, plastic, wood, paper and paperboard packaging of all types;
- Organic Wastes — i.e., food and yard wastes.

Table 1 A presents available estimates of the percentages and weights of each of these product groupings discarded into the MSW stream on a **national** basis in the United States. Table 1 B translates these figures to Ontario by simply pro-rating these figures on the basis of population. This approach would indicate that total quantities of MSW disposed would be of the order of magnitude of 6 million tonnes in 1988, rather than the 10 million tonnes indicated in Figure 2. The major discrepancy here is likely to involve differences in the definitions of MSW. Again, these figures provide only general estimates for initial planning purposes.

In order to provide an additional perspective on what materials are likely to be found in the Ontario waste stream, Tables 2 through 4 provide some very preliminary and incomplete estimates (drawn from a variety of sources and sometimes reflecting different years) of specific products sales in Ontario. Further primary research is required to develop more complete data regarding the actual tonnages of these products in the Ontario MSW stream. An effective interim approach might involve use of available Neilson data on retail product sales, with manipulation of this data to estimate solid waste disposal impacts.

3.0 GUIDING PRINCIPLES FOR DEVELOPMENT OF A COMPREHENSIVE RECYCLING STRATEGY

Section 2 provided a general overview of general solid waste management issues that affect recycling. The material which follows focuses on recommendations to advance MSW recycling in the province beyond the existing Blue Box system.

Ontario, like other jurisdictions throughout North America, is wrestling with some fundamental issues that must be addressed in the transition to higher-order waste management practices. Such a transition cannot be achieved simply by adding another level of collection service for a limited number of waste products that are currently considered to be recyclable.

Developing a sustainable waste reduction strategy will require a major shift in the beliefs and attitudes, as well as the waste management behavior, of both producers and consumers in the province. Responsible waste management services are an essential social mechanism and the costs of developing these services should be absorbed by all sectors. Changes may also be required in product design and manufacture to minimize waste. Local governments must institutionalize the practice of recycling as an integral component of the waste management services they provide. And the Province must set the clear policy goals now required to support the further evolution of waste management in Ontario.

Achieving such fundamental changes cannot realistically be accomplished through unilateral action by any one of the major players — the Province, local government, industry or consumers. Design and implementation of an effective waste recycling strategy for Ontario will require the support and active participation of all.

Development of a successful recycling strategy cannot be divorced from a basic reorientation of how we treat "waste". Some of the basic practices

that have governed the evolution of municipal waste management in Ontario to date include:

- Payment for waste management services from general revenues, and universal access to the system with little or no restriction on the quantities of wastes an individual household can put into the system.

- Expansion of the waste collection and disposal system as a basic municipal service, and in direct response to the growth in the rate of waste generation.

- Treatment of recycling largely as a commodities business, rather than an integral component of the total waste management system.

- Treating the costs of disposing of a product, and its packaging, as an "externality" of the production process.

The Ontario soft drink container regulations represented a significant change in provincial government attitudes towards the last two of these practices — at least for one minor component of the overall solid waste stream. The soft drink industry was compelled to develop a successful recycling system for its empty containers (under threat of penalty through imposition of a deposit) as a condition of introducing new packaging types into the Ontario market. It is the impetus gained from this one regulation which is in large measure dominating the thinking on "where do we go from here?" in recycling in Ontario.

Applying the same structure of the soft drink container regulations to all elements of the municipal solid waste stream, however, is an enormously complex proposition. The success of the Blue Box program initiated by the soft drink industry in response to the regulations can be traced to a number of key factors, including the following:

- Beverage containers are easily identifiable and are highly recyclable.

- A small number of key players — the franchise houses — could ensure that the material suppliers, the container suppliers and the manufacturers of the product itself were incorporated into the recycling plan.

- Soft drinks sold in Ontario are largely manufactured in Ontario.

- The provincial government had the regulatory power to impose an alternative recycling system on the industry.

- The economic consequences to the industry of the alternative system were considered to be more severe than helping to launch an aggressive municipally-based recycling effort.

- An effective municipal recycling industry represented a potentially permanent solution to the problem.

- A "garbage crisis" was clearly developing in the province and the public was sensitive to the need for alternatives.

- The soft drink industry committed itself to making the Blue Box program work.

The soft drink container regulations were not designed to be "fair" in terms of how these waste materials were treated in comparison to other waste materials. Used soft drink containers were acknowledged to be less than 1% of municipal solid waste, but this was the only industry that would be compelled to help develop municipal recycling programs. Furthermore, the soft drink industries' container recycling rates would only be credited if they were achieved through multi-material recycling programs which included newspapers, glass and metal food and beverage containers other than soft drinks — which together comprise an estimated 24% of all residential solid waste. Private sector funding to

support implementation of this program was provided only by the soft drink industry and its container, and container material, suppliers. Municipalities were not required to implement recycling programs that were necessary to meet the required recycling targets.

A similar requirement that all waste products now in the municipal waste stream attain a specific recycling target by a specified date would overwhelm the existing recycling infrastructure in the province, and result in large stockpiles of materials for which there are limited market outlets.

An appropriate recycling strategy for Ontario must address all components of the municipal waste stream; build upon the infrastructure already in place; share costs in an equitable manner; have short- and long-term goals; and involve all sectors of the province in becoming part of the solution.

In the process of developing this paper, the Recycling Strategy Task Group developed the following "guiding principles" that should provide the basis for Ontario's municipal waste recycling strategy.

An over-riding principle which has guided the development of this report is that the Province of Ontario faces a unique opportunity to play an important leadership role for all of North America in the evolution of more effective and rational waste management practices.

Guiding Principle # 1

The Minister of the Environment has indicated that as a longer-term goal, the total amount of municipal solid waste disposed of in Ontario should be reduced by 50% by the year 2000 .

RAC accepts this as a worthwhile goal. However, it is recognized that this is essentially an arbitrary figure, based upon a largely subjective assessment of what is considered to be technically, politically, and economically achievable given current knowledge and conditions. It is

also not at all certain that the Province can directly influence all of the changes that will be required to meet this objective. A detailed analysis is required of how this goal can be achieved, and of the economic, social and environmental costs and benefits involved.

It is specifically intended that this goal be met through waste reduction at source, materials recycling, and composting of organic wastes, as opposed to incineration of MSW.

Establishment of any waste reduction goal should also be based upon a given base year, with adjustments made for population growth and the quantities of materials already being recovered from municipal solid waste for recycling.

While the skills, technologies, and mechanisms needed to achieve such a goal have not yet been clearly defined, the clear definition of the objective and the timeframe in which to achieve it, provide an essential framework for detailed planning and the commitment of the resources that will be necessary to get the job done.

Guiding Principle # 2

The Province of Ontario should develop and implement comprehensive waste reduction and recycling legislation to support the achievement of its waste reduction and recycling goal. The proposed legislation would need to have a neutral impact on non-waste related commercial considerations among competing products, companies and industries and encompass at least four broad areas:

- *To reduce the production of wastes at their source;*
- *To require local governments to take action to achieve the waste reduction goals established by the province;*
- *To remove institutional barriers to local government action;*
- *To provide ongoing incentives to minimize waste disposal.*

It is recognized that the development of such legislation will be a complex and time-consuming process. However, the major impacts upon all sectors of the economy that could potentially result from such a transition clearly justify broad public debate and input that will occur during the legislative process. Of particular note in this regard would be the implications for manufacturers, wholesalers, and retailers of products imported for sale in Ontario, and the manufacturers of products produced in Ontario and exported to other jurisdictions.

If 50% waste reduction is to be a serious public policy commitment, clear mechanisms will need to be established for reducing at source, or recycling, at least 5,000,000 tonnes of materials now discarded as municipal solid waste every year — in less than 12 years. The development and passage of such legislation alone can be expected to take a minimum of two years.

In order to keep the magnitude of this task in perspective, 5,000,000 tonnes of materials per year:

- is almost twice the total annual quantities of waste now being generated by the whole of Metropolitan Toronto.

- would, on a weight basis, be equal to approximately 60% of the total annual production of the Canadian newsprint industry, one of the nation's largest industries.

- will likely cost significantly more than $500,000,000 per year to collect and dispose of by the year 2000, if these waste materials are not eliminated or recycled.

The changes that will be required to achieve such a goal — changes in people's day-to-day behavior, in the manufacture of products, in designing, funding and implementing alternative waste management strategies — will in all likelihood require the force of law. These changes will also require broad action by provincial government agencies other

than the Ministry of the Environment and should not be dependent upon moral suasion alone.

Guiding Principle # 3

As an interim goal, source separation recycling and composting programs should be implemented which can, by 1994, reduce the total amount of materials that must now be collected, processed and disposed of as municipal solid waste, by at least 30% of the total municipal solid waste disposed of in Ontario in 1988 (adjusted for population growth and the quantities of materials already being recovered from MSW for composting and recycling).

The broader planning and developmental work still required to achieve the long-range waste reduction goals for the province should not prevent immediate action on recycling programs that are already known to be technically viable. As with the long-range goal of 50%, this also represents a relatively arbitrary number that will require a major effort to achieve.

Guiding Principle # 4

The short-term recycling strategy should build upon the collection and intermediate processing infrastructure already in place by:

(a) directly involving those industries whose products are already serviced by the "Blue Box" system;
(b) identifying immediate candidate materials for inclusion in the Blue Box system, and implementing recovery programs;
(c) identifying and implementing systems changes required to incorporate additional materials;
(d) implementing mechanisms to ensure that those additional materials which are not included in the recycling system today also contribute to the total recycling system development costs, in some proportion to their contribution to municipal solid waste.

This approach would serve to protect the investment already made in the existing recycling system; allow for orderly expansion of the system (including development of new technologies and markets that will be required); while broadening the financial base for constructing the necessary recycling infrastructure in a more equitable manner.

Banning specific products and/or packaging or otherwise driving materials out of the marketplace, could have significant negative consequences for other important social goals which are not yet clearly understood. These could include such issues as consumer health and safety, total system energy requirements, net environmental benefits, total systems costs and consumer preferences. To increase the chances of success, materials should be added to the existing recycling system only as rapidly as existing operations can handle them and as new recycling technologies and techniques will allow, while ensuring that all contributors pay their fair share to the development of alternative systems.

Guiding Principle # 5

The equipment and launch costs associated with implementing new municipal waste recycling programs should be shared among industry, local and provincial governments.

Again, while this represents an arbitrary allocation of costs, this approach has proven successful as the basis for funding implementation of the existing blue box system.

"Industry" is meant to refer collectively to the material suppliers, manufacturers, packagers, and retailers of all products which are encompassed in the definition of municipal solid waste disposed in Ontario.

"Local government" is intended to include all lower levels of government — municipal, county, and regional — that provide waste management services.

Guiding Principle # 6

The staff resources and technical advisory capacity of the MOE should be enhanced sufficient to complete the Ministry's responsibilities for implementing this recycling strategy. Additional staff resources will also likely be required within the Waste Management Branch for broader waste management planning, monitoring, and enforcement as a result of this program.

The complexity and scope of the work that will be required of the MOE to implement this broader program will necessitate expansion of personnel resources, in addition to capital and operating grant funds, in order to provide the planning, administrative, and technical support services that will be required for successful implementation in a timely manner.

Further definition of these resource needs should also take into consideration the expanded roles and responsibilities being recommended for the Recycling Advisory Committee and private-sector support agencies such as OMMRI, and the resources that these organizations may also be able to apply to effective implementation.

Guiding Principle # 7

The primary responsibility for the on-going operating costs of municipally based recycling programs should remain with the local levels of government that are responsible for the other essential elements of the overall waste management system.

Local governments are now responsible for the key decisions on design and operation of the overall solid waste management system selected, and the costs of providing this service. It would seem logical, therefore, to incorporate the ongoing costs of providing the community-specific recycling services into that community's total waste management systems costs.

While the costs of recycling individual components of the solid waste stream will vary (as these costs also vary for collecting and disposing of these individual materials as wastes), other mechanisms are available to ensure "a level playing field".

Guiding Principle # 8

The ongoing viability of municipal waste recycling programs can be sustained most effectively through the implementation of:

- *Full cost accounting and user-pay charges for all elements of the municipal solid waste management system;*
- *Incentive programs that ensure that Ontario municipalities design and implement waste reduction and recycling programs able to achieve the waste reduction targets established by the province;*
- *Aggressive procurement and market development strategies in both the public and the private sectors which favor the use of secondary materials;*
- *A requirement that materials and products sold in the Ontario marketplace achieve and maintain a specified recovery and recycling rate, and/or that manufacturers of products utilize an equivalent amount of secondary materials in their operations;*
- *Ongoing education and promotion of the need, and opportunities for waste reduction and recycling, in both the public and the private sectors.*

The full costs of providing municipal waste collection and disposal alternatives are not widely understood and are usually undervalued. Generators of waste in Ontario are not always charged directly for these services, or in proportion to the amount of waste they produce. This is a clear disincentive to recycling.

Local governments are already required to meet specific guidelines set down for planning, designing, and managing other elements of the solid waste management system. If the producers of products sold in Ontario are to be required to meet specified recycling objectives, it is also reasonable to require local governments to take action on recycling in an expeditious manner. Flexibility should be allowed in how a community designs the most effective program required to meet the overall reduction targets given their own unique site and situation, although some minimum performance guidelines are likely to be required.

Recovery of materials from the solid waste stream does not in itself constitute recycling. An effective recycling strategy must also ensure that materials which are recovered are not simply disposed of as waste later. While governments can show leadership in market development, and adjust their broader economic development and procurement policies to favor recycling, the sheer magnitude of the task will require the broad participation of industry.

The necessary conditions for successful growth in recycling include capital investment, market development, reorientation of the waste management system, removal of institutional barriers, and education. It is also likely that the overall 30%/50% waste reduction targets can and will be achieved through differential recovery rates among the materials and products which together constitute the municipal waste stream. Requiring that all products and materials sold in Ontario achieve at least a common minimum recovery and recycling rate, and/or utilize an equivalent amount of secondary materials in their production process, is intended to:

- ensure that some products do not gain an advantage in the marketplace in part by externalizing the costs of managing these products after they become waste.

- ensure that there is a long-term commitment by industry to the ongoing success of the strategy.

- stimulate market demand for secondary materials.

- provide an on-going incentive to incorporate recyclability into product design.

- provide a clear "sunset" mechanism for the start-up contribution that industry is expected to make to the development of the recycling infrastructure.

- provide flexibility for individual industries to use a variety of mechanisms for promoting the recovery of its materials.

- recognize that this will involve the direct involvement of manufacturers, packagers, wholesalers, and retailers.

Products which cannot meet the recovery rate or usage of recyclable materials requirements (given other possible superceding design and performance requirements) could be assessed a "waste management surcharge", with the monies raised from these charges dedicated to detailed monitoring of the waste management situation, promotion of recycling and recyclable products; and research and development of processes to overcome the barriers to the recycling of these materials.

While it is true that businesses produce only what consumers demand, it is also true that these demands are shaped in part by marketing and promotion strategies. Given that the residents of Ontario will need to be convinced of the need to alter their basic waste management attitudes and behavior, considerable investment will be required for promotion and education in the area of waste reduction and recycling. It will be necessary

to weave this message into public and private information programs, on an ongoing basis.

Guiding Principle # 9

A voluntary approach to industry participation in, and funding of, this proposed recycling strategy is preferred. However, competitive pressures in the marketplace may work against cooperative efforts across industry sectors, or among competing companies within an industry sector, to tackle what is a broad social problem. Therefore, the Government of Ontario should draft and implement regulations designed to require broad private industry participation in the development of comprehensive municipal recycling programs, which would take effect at a specific date, if it is demonstrated that a voluntary approach is not viable. Funds raised through any solid waste tax or fee imposed through regulation should be dedicated specifically to waste reduction and recycling programs, as opposed to general provincial revenues.

Under current conditions there is little or no incentive for broader industry participation in the existing OMMRI program, or a broader variation of this model:

- Prevailing business and waste management practices still favor disposal over recycling in many cases.

- There is no regulatory pressure similar to the soft drink container regulations to force immediate action.

- The recycling objectives of the Province are not yet clearly articulated, nor have the full costs of achieving these objectives been defined.

- No equitable mechanism has yet been identified for allocating costs fairly among all industries which contribute to municipal solid wastes.

- A broad "solid waste tax" is considered to be more likely to catch all of the contributors to MSW, and would be a straight pass-through cost to the consumer.

- Some companies are not able to match the skills and resources available to their competitors to deal effectively with their own waste products, and therefore a broad government-imposed tax would appear to ensure "a level playing field".

- It would be advantageous for many industries to avoid becoming involved in the program for as long as possible, in order to minimize costs, and/or to wait for direct government action against competing materials or products considered to be a likely target for punitive action.

- Simply banning items which do not achieve the suggested recycling rates does not appear credible for all products.

There are still significant factors, however, which favour a voluntary approach:

- A tax imposed to deal with solid wastes may be treated as general revenue and not be directed entirely to the problem of solid waste.

- Any tax imposed could potentially become a permanent revenue source for the provincial government, to be applied to other pressing needs.

- The government cannot unilaterally force all of the broad range of changes that will be required by industry to make this ambitious recycling program work.

- The experience of the OMMRI model has demonstrated that proactive private sector action can lead to rapid and efficient implementation.

- Many companies would be willing to take voluntary action if there was a reasonable assurance that they would not face punitive action later, whatever their own efforts achieved, and if there was some assurance that those that did not volunteer would be required to contribute their fair share by the government.

Guiding Principle # 10

Any regulations implemented should provide for exemptions for those industries/products which already meet the recovery/recyclable materials usage requirements or for which effective voluntary action programs have been implemented .

Some industries may be reluctant to take aggressive voluntary action if there is the possibility of a tax being applied at a later date, regardless of their efforts, or because they do not want to incur additional costs not currently borne by their competitors.

Exemptions from a tax (or an alternative waste management fee assessment) against those industries which do act voluntarily, combined with some positive public profile for those which do launch voluntary efforts, may prove to be effective motivational tools.

Guiding Principle # 11

Industry groups should be encouraged to coordinate their municipal recycling support programs through a single agency in Ontario. Revision and expansion of the current OMMRI structure, in order to incorporate the widest possible range of industries,would provide an effective vehicle for coordinating these efforts.

Considerable investment has already been made in establishing OMMRI as an effective capital and technical support group for implementing municipal recycling programs in Ontario. The organization is already recognized by key stakeholders as a focal point for private-sector support.

Establishing separate organizations to provide support for individual products or specific material types would result in implementation delays, inefficiencies in program delivery, and promotion and administrative confusion.

Guiding Principle # 12

Increased financial commitments will be required from provincial and local governments, and the private sector, to support implementation of this recycling strategy.

Although recent polls clearly indicate that environmental protection ranks as one of the primary concerns of the general public, the Ministry of Environment receives only a relatively minor share of the provincial budget when compared to other major social concerns such as health care and education. Improved waste management practices for this province must be given a higher priority by the provincial government with a commensurate increase in funds dedicated to this societal goal. Successful implementation of the proposed recycling strategy would also result in significant environmental and economic benefits for the province as a whole.

Municipal support for recycling in Ontario has to date been driven in large measure by the EPA requirements for siting new waste disposal facilities. In order for this strategy to succeed, local governments will need to commit significantly increased financial resources to waste reduction and recycling. It is recommended that the costs that will be incurred for waste reduction and recycling programs be directly incorporated with other local waste management fee structures such as tipping fees.

While the financial contribution made by any company or individual product should logically reflect such factors as its proportionate contribution to total solid waste, the degree of difficulty of disposal or recycling of the product, the recycling rate actually achieved, and other factors, the development of a truly equitable, and administratively manageable method of achieving these goals, will require some time to develop. **As an interim step**, all companies selling products in the Ontario market should share in the cost of this effort through a broad-based, equitable contribution to a central recycling support fund. Resources should be allocated from this pool to design and implement a more equitable approach to funding which could incorporate a wide-range of waste management factors.

Guiding Principle # 13

The primary responsibility for expanding existing markets for materials recovered in Ontario should rest with the producers and distributors of those products sold into the Ontario market.

Sufficient markets do not currently exist for all of the projected volumes of materials that would likely be recovered for recycling as a result of this proposed strategy. Market values for recovered materials will also continue to fluctuate more widely than for competing virgin materials. Municipalities will need assistance to establish sufficient intermediate processing capacity, and materials marketing support, to maximize their abilities to market recovered materials.

Both the manufacturers and their material suppliers of products now disposed of as municipal solid waste must take the primary responsibility for creating the new market outlets that will be required for these materials. This can be accomplished in part by specifying the use of minimum quantities of secondary materials in the product itself; in the materials and equipment used throughout the production chain; in primary and secondary packaging applications; throughout the product distribution chain; and within the materials recovery and recycling

system itself. It is also certain, however, that direct investments will be needed to retrofit existing production facilities to increase the opportunities for utilizing secondary materials, and to establish new plants designed for using these recovered wastes.

Government agencies can indirectly support these market development efforts by establishing aggressive procurement practices which require the use of waste materials in some products and processes (i.e., compost in soil applications, recovered materials in road work, etc.), and by establishing preferential pricing policies for other products containing minimum percentages of post-consumer waste. Additionally, investment tax credits and consumption tax credits should be considered to encourage investment in new materials recycling capacity within the province of Ontario.

4.0 RECOMMENDATIONS FOR ACTION

The thirteen guiding principles as outlined in Section 3.0 establish both a general direction for the further evolution of recycling in Ontario, and provide broad recommendations for action.

A detailed implementation plan is still required for achieving the broad waste reduction and recycling goals as outlined in this report. In addition to the recommendations that are implicit in the broader principles as outlined, the following specific recommendations are made for immediate action by the Province of Ontario:

1. Establish a clear, detailed definition for the proposed waste reduction and recycling goals, and establish an effective mechanism for monitoring progress, including detailed, on-going measurement of the composition of municipal waste stream specific to Ontario.

2. Provide an opportunity for all major stakeholders in this issue to have direct input into the design of interim regulations, and to the development of the recommended waste reduction and recycling legislation, prior to their implementation.

3. Determine, with broad public input, the specific costs that local governments must include in establishing full-cost accounting practices for waste management services; define acceptable approaches to charging for waste management services on a user-pay basis; and require that local governments institute these practices over a reasonable timeframe.

4. Establish mechanisms which will ensure that all local governments design and implement waste reduction and source separation recycling programs that can reasonably be expected to achieve the interim reduction target of 30%, (including

consideration of waste reduction and recycling programs already in place).

5. The MOE, in cooperation with the efforts of industry, should expand its municipal, source-separation recycling support program to provide expanded planning, financial, technical, and educational support services to help local governments achieve this interim goal in a cost-effective manner.

6. The MOE should make 5-year and 10-year planning commitments sufficient to administer this program, and also to contribute at least one-third of the total costs expected to be incurred by local governments in implementing this strategy.

7. The Province should require that all government facilities, and government supported agencies, develop and implement waste reduction and recycling programs able to achieve the recommended 30% and 50% waste-reduction targets established for the province as a whole.

8. The Province should implement procurement guidelines which provide a preferential purchasing policy (up to 10% of the bid price) for products manufactured from a minimum percentage of post-consumer wastes. This procurement policy should also be required for all agencies to which the province provides funding (i.e., local government road construction and maintenance, etc.).

9. Request that industries representing the majority of the materials suppliers, manufacturers, packagers, and retailers of durable goods, non-durable goods, containers and packaging, and food products now disposed of as municipal solid wastes in Ontario become contributing members of OMMRI by July 1, 1989, in a co-ordinated effort to expand municipal recycling programs in Ontario. Participation would include commitment of a pro-rated share of the financial resources estimated to be required to fund

the start-up costs, and up to one-third of the capital costs, associated with implementing comprehensive municipal recycling and composting programs able to achieve a 30% reduction of MSW disposed in Ontario by 1994.

10. It is recognized that all who contribute materials to the solid waste stream should contribute to the costs of recycling or managing those wastes. It is also recognized that establishing an equitable formula for allocating these costs is a complex undertaking that must take into account a wide range of issues, including such things as wholesale and retail sales, imports and exports, product mark-ups, administrative costs, etc.

    It is recommended that private-sector participants be requested to establish at least an interim funding mechanism to support implementation of this strategy. No detailed assessment has yet been completed of the total costs of implementing this strategy as outlined. As a rough subjective assessment, however, it is likely that the annual capital and start-up costs that will be incurred will at least be equal to the current level of annual expenditures of the MOE, local levels of government, and OMMRI. Following the recommended strategy of this report, approximately one-third of this cost would be contributed directly by industry. Clearly, a detailed implementation plan and cost analysis is required immediately to support this strategy paper.

    It is further recommended that a portion of the funds raised be applied to a detailed analysis of how to devise a more equitable approach to funding that better reflects the true waste management/recycling characteristics of materials and products sold. The urgent need to accelerate recycling in Ontario, combined with the relatively minor cost implications of a small levy of this type, however, would argue in favour of this initial step, as opposed to inaction until this analysis is completed.

11. The MOE should develop and implement regulations that would take effect January 1, 1990, to add an appropriate levy to all materials and products sold in Ontario that are not contributing to the central recycling fund on a voluntary basis, and which would allow for a graduation of this tax in subsequent years in proportion to the recycling levels achieved by particular products or material types.

12. Materials suppliers and related industries should be requested to prepare by January 1, 1990, market development strategies sufficient to absorb the quantities of specific recoverable materials (i.e. newspapers, glass, metals, old corrugated cartons, etc.) projected to be recovered by 1994 and 2000.

13. The Province of Ontario should support at the federal level, and through inter-provincial action, the adoption of uniform approaches to recycling and waste management strategies and regulations across Canada, particularly as they effect industry.

14 Implement regulations which restrict the disposal of inert wastes in landfills receiving municipal solid wastes. Where receipt of such materials is permitted, facilities should be provided at the site, or prior to delivery to the disposal site, to process this material for maximum recovery of recyclable materials.

15. The MOE should require that communities in excess of an appropriate minimum population threshold **establish a site** suitable for the composting of yard and garden wastes; establish guidelines, following public input, for the siting of composting facilities for other organic wastes; and establish compost product quality standards for potential end-uses of compost (i.e., as landfill cover, commercial gardening, etc).

16. Encourage communities in Ontario over a minimum population threshold to **provide for composting** of yard and garden wastes generated in those communities, by a specified date.

17. Implement regulations which require the establishment and operation of permanent household hazardous waste collection centres in all communities in Ontario over a minimum population threshold; or to provide regular HHW collection days to collect materials as designated by the MOE.

18. Expand the mandate of RAC to provide advice to the Minister of the Environment on all elements of this proposed program, and reconstitute the membership of the committee to reflect this broader mandate. The basic guiding principles as outlined in this report should provide the basis for this reorganization.

MEMBERS OF RECYCLING ADVISORY COMMITTEE

Ms. J. Wendy Cook, Chairperson

Mr. Tim Carter, Vice-President, Canadian Council of Grocery Distributors
—representing food retailers

Mr. Michael Frost, Director of Environmental Energy and Supply Services, Canadian Pulp & Paper Association
—representing newsprint manufacturers

Mr. John Hanson, Executive Director, Recycling Council of Ontario
—representing the Recycling Council of Ontario

Mr. Stuart Hartley, Executive Director, Ontario Soft Drink Association
—representing the Ontario Soft Drink Association

Mr. Joseph P. Hruska, Executive Director, Canadian Tinplate Recycling Council
—representing the steel industry

Mr. C. Isaacs, Executive Director, The Pollution Probe Foundation
—representing a non-governmental environmental organization

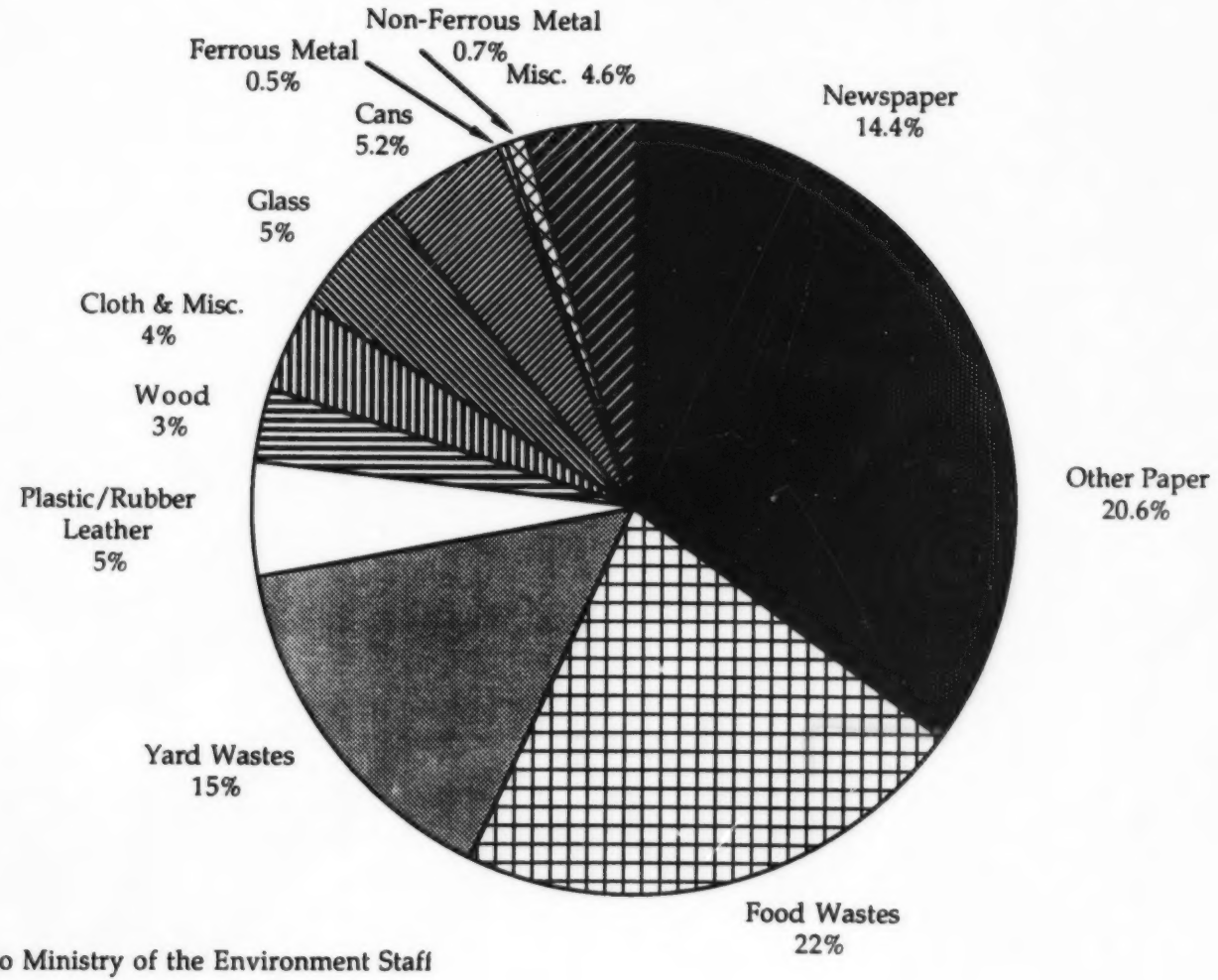
Ms. Janet Mitchell, Councillor, Region of Halton
—representing the Association of Municipalities of Ontario

Mr. Michel Primeau, National Recycling Manager, Alcan Rolled Products Co.
—representing the aluminum industry

Mr. J. D. Scott, President, Crown Cork & Seal Canada Inc.
—representing metal can manufacturers

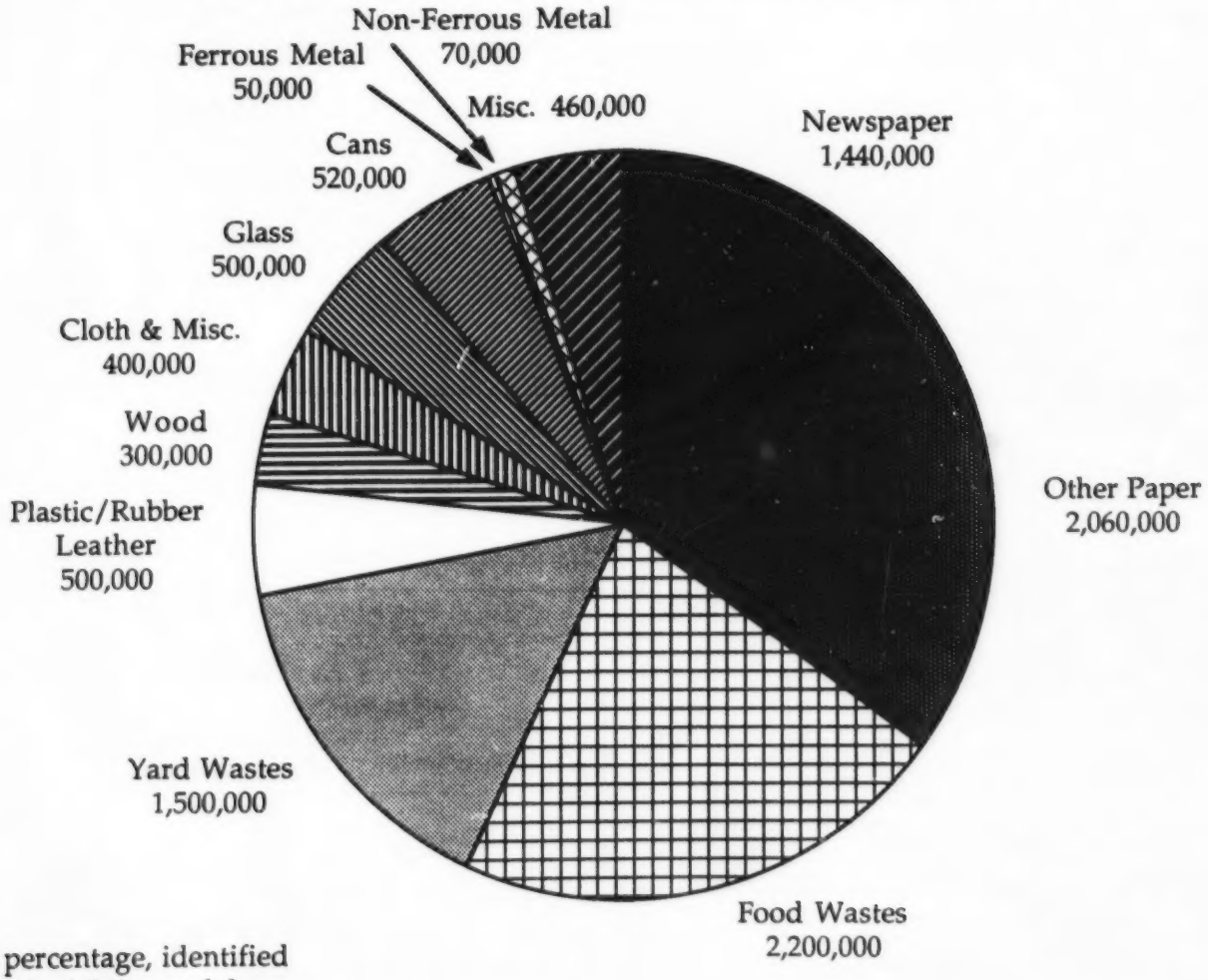
Mr. Joe E. Souccar, President, CB Pak Inc.
—representing the glass industry

Figure 1
Composition of Ontario MSW*
(Residential & Commercial/Industrial)



*Notes:
1. Source: Ontario Ministry of the Environment Staff
2. % by weight
3. Categories require further definition (ie. Cans)

Figure 2
Composition of Ontario MSW*
(Residential & Commercial/Industrial) Metric Tonnes



* Note: Applies percentage, identified on Figure 1, to the Ministry of the Environment Staff estimate of 10,000,000 tonnes of MSW disposed in Ontario in 1988.

Table 1A
PRODUCTS DISCARDED INTO THE U.S. MUNICIPAL WASTE STREAM*
(In millions of tons and percent)

Products	"1970"		"1986"		"2000"	
	tons	%	tons	%	tons	%
Durable Goods	13.9	12.4	19.2	13.6	23.0	13.6
Nondurable Goods	21.4	19.0	35.4	25.1	47.5	28.1
Containers and Packaging	39.3	34.9	42.7	30.3	50.7	30.0
Other Wastes**	37.8	33.6	43.4	30.8	47.5	28.1
TOTAL	**112.4**	**100.0**	**140.7**	**100.0**	**168.8**	**100.0**

Table 1B
PRODUCTS DISCARDED INTO THE ONTARIO MUNICIPAL WASTE STREAM*
(In millions of tons and percent)

Products	"1970"		"1986"		"2000"	
	tons	%	tons	%	tons	%
	0.5	12.2	0.7	13.5	0.9	13.4
Durable Goods	0.8	19.5	1.3	25.0	1.9	28.3
Nondurable Goods	1.4	34.2	1.6	30.7	2.0	30.0
Containers and Packaging	1.4	34.1	1.6	30.8	1.9	28.3
Other Wastes**						
TOTAL	**4.1**	**100.0**	**5.2**	**100.0**	**6.7**	**100.0**

* Wastes discarded after materials recovery and before energy recovery.
Details may not add due to rounding

**The other wastes category is primarily composed of yard and food waste.

Source: Franklin Associates, Ltd.

TABLE 2
PARTIAL ESTIMATE OF RATIOS OF DURABLE GOODS SOLD IN ONTARIO*

ITEM	DOLLAR VALUE	PERCENT OF TOTAL $ VALUE	UNIT	UNIT DESCRIPTION
FURNITURE & FIXTURES	$944,548,696	29.8%		
RUBBER TIRES & TUBES	$562,509,948	17.8%	14,101,274	NUMBER
RECREATION EQUIPMENT	$292,373,536	9.2%		
COOKING UTENSILS — METAL	$204,248,044	6.5%		
COOKING EQUIPMENT FOR FOOD	$192,399,844	6.1%	1,609,502	NUMBER
HAND TOOLS & CUTLERY	$161,991,648	5.1%		
BATTERIES	$128,826,516	4.1%	25,482,916	NUMBER
JEWELLRY & SILVERWARE	$112,620,144	3.6%		
REFRIGERATORS & FREEZERS	$111,110,272	3.5%	301,349	NUMBER
WASHING MACHINES	$69,004,936	2.2%	168,662	NUMBER
WATCHES & CLOCKS	$59,725,120	1.9%	1,303,103	NUMBER
DISHWASHERS	$58,708,832	1.9%	172,388	NUMBER
AIR CONDITIONERS	$50,956,360	1.6%	113,267	NUMBER
BROOMS, BRUSHES, MOPS	$34,570,172	1.1%		
VACUUM CLEANERS	$31,052,476	1.0%	290,610	NUMBER
LAWN MOWERS	$30,558,528	1.0%	88,908	NUMBER
PORTABLE LAMPS	$26,693,940	0.8%		
FANS (EXCLUDING INDUSTRIAL)	$22,994,244	0.7%	305,359	NUMBER
BATHTUBS	$20,367,620	0.6%		
SINKS	$18,688,488	0.6%		
TOILETS	$9,761,752	0.3%		
HUMIDIFIERS	$6,773,312	0.2%	106,700	NUMBER
SHOWER UNITS	$6,317,220	0.2%		
SMOKE DETECTORS	$5,793,424	0.2%		
SPACE HEATERS	$1,846,208	0.1%	55,050	NUMBER
TOTAL	$3,164,441,280	100.0%		

*Based on information from Statistics Canada, 1983.

Note: Estimates of sales value only, and may not reflect amount entering waste stream.
These figures summarize available public data and therefore do not include the value of all durable goods sold in Ontario.

TABLE 3

PARTIAL ESTIMATE OF NON-DURABLE GOODS AS A COMPONENT OF ONTARIO MUNICIPAL SOLID WASTE STREAM*

ITEM	DOLLAR VALUE	PERCENT OF TOTAL $ VALUE	UNIT	UNIT DESCRIPTION
APPAREL & ACCESSORIES	$2,016,114,828	43.5%		
TOILETRIES, CLEANING PREPARATIONS	$718,160,352	15.5%		
BATTS, FELTS, YARNS, THREADS, CORD	$384,206,732	8.3%		
FOOTWEAR	$340,971,176	7.4%	23,995,244	PAIRS
FINE PAPERS	$260,769,964	5.6%	46,298	METRIC TONNES
CARPETS	$228,729,956	4.9%	24,986,104	SQUARE METRES
CONVERTED PAPER	$211,355,144	4.6%		
BOOKS & PRINTING PAPER	$108,891,328	2.3%	114,382	METRIC TONNES
BEDDING TEXTILES	$105,580,020	2.3%		
HOUSEHOLD & PERSONAL EQUIPMENT — OTHER	$90,685,504	2.0%		
PAPER TOWELS	$57,872,724	1.2%	44,914	METRIC TONNES
FACIAL TISSUES	$36,198,708	0.8%	17,365,750	KILOGRAMS
TABLECLOTHS, NAPKINS & RELATED	$35,489,636	0.8%		
PAPER CUPS & PLATES	$16,540,524	0.4%		
KITCHEN UTENSILS & FLATWARE — PLASTIC	$10,386,012	0.2%		
WASHCLOTHS & BATH MATS	$8,358,896	0.2%		
CUSHIONS & PILLOWS	$4,648,644	0.1%		
TOTAL	**$4,634,960,148**	**100.0%**		

*Based on information from Statistics Canada, 1983

Note: These figures summarize available public data and therefore do not include the value of all containers and packaging sold in Ontario.

TABLE 4
PARTIAL ESTIMATE OF RATIOS OF
CONTAINERS AND PACKAGING SOLD IN ONTARIO*

ITEM	DOLLAR VALUE	PERCENT OF TOTAL $ VALUE	METRIC TONNES	UNITS	UNIT DESCRIPTION
FOLDING BOXES & CARTONS	$200,131,568	20.3%			
CANS — METAL, FOR FOOD	$148,523,648	15.0%			
PLASTIC BAGS	$146,650,868	14.9%			
WRAPPING, PACKAGING & RELATED PAPER	$113,471,540	11.5%	35,091.4		
PAPER BAGS	$88,661,664	9.0%			
CANS — METAL, BEVERAGE	$67,155,088	6.8%			
CORRUGATING BOARD	$49,617,932	5.0%	7,730.0		
CLOSURES, ACCESSORIES, & PARTS — METAL	$38,506,832	3.9%			
CONTAINERS — PLASTIC FOAM	$35,701,484	3.6%			
OTHER PLASTIC CONTAINERS	$34,082,776	3.5%		269,457,188	Containers
PLASTIC FOOD CONTAINERS	$28,681,744	2.9%			
CONTAINERS — WOODEN	$16,177,252	1.6%			
CONTAINERS — ALUMINUM FOIL	$8,194,004	0.8%			
BOXES & CASES — PLASTIC	$7,422,324	0.8%			
RUBBER & PLASTIC PACKING	$4,221,672	0.4%			
TOTAL	**$987,200,396**	**100.0%**			

*Based on information from Statistics Canada, 1983.
Note: These figures summarize available public data and therefore do not include the value of all containers and packaging sold in Ontario.